CLAIMS

What is claimed is:

1. In a wireless communication system wherein data is transmitted in blocks over a communication channel during successive time intervals of a specified size and block error rate (BLER) information of the reception of the data blocks on the communication channel is reported for use in controlling channel transmissions, a method for block error rate (BLER) estimate reporting, comprising:

receiving the communication channel and for each of a series of successive time intervals:

counting the number of data blocks received over the time interval;

storing a value *i* representative of the number of data blocks received;

performing error checking on the data blocks received;

storing a value S*(i)* representative of the number of data blocks having errors;

comparing value *i* to a first predetermined threshold to produce a first BLER estimate report trigger when *i* exceeds the threshold;

calculating a BLER estimate based on the values *i* and S*(i)*;

comparing the BLER estimate to a predetermined multiple of a target BLER value for the channel to produce a second BLER estimate report trigger when the BLER estimate exceeds the a predetermined multiple of the target BLER value; and

sending a BLER estimate report in response to the production of the first or second report triggers; whereby no report is sent when the first or second triggers are not produced.

2. The method of claim 1 wherein said comparing to produce a second BLER estimate report trigger further comprises comparing value *i* to a second predetermined threshold.

3. The method of claim 1 wherein said BLER estimate report is reflective of data block reception over a time interval that includes the *i* number of observed data blocks over the time interval; the S*(i)* number of erroneous data blocks over the time interval; the BLER estimate for the time interval; and an identification of the report trigger.

4. The method of claim 3 wherein the data blocks are transport blocks (TBs) associated with a plurality of transport channels (TrCHs) multiplexed on a coded composite transport channel (CCTrCH), each transport channel having a target BLER based on quality of service requirement and the method is performed with respect to a selected channel identified as a reference transport channel (RTrCH).

5. The method of claim 4 wherein said BLER estimate is representative of the CCTrCH, said report further comprising:

a target BLER for the CCTrCH;

an identification code for the CCTrCH.

6. The method of claim 5 wherein said report further comprises:

an identification code for the reference transport channel.

7. In a wireless communication system wherein data is transmitted in blocks over a communication channel during successive time intervals of a specified size and block error rate (BLER) information of the reception of the data blocks on

the communication channel is reported for use in controlling channel transmissions, a method for block error rate (BLER) estimate reporting, comprising:

a) receiving the communication channel and for each of a series of successive time intervals:

b) storing a value *i* representative of the number of received data blocks and a value i_prime representative of value *i* minus a predetermined minimum number of data blocks related to performing error checking with a predetermined minimum acceptable accuracy;

c) performing error checking on the received data blocks;

d) storing a value S*(i)* representative of the number of data blocks having errors;

e) calculating a BLER estimate based on the i_prime and S*(i)* values;

f) comparing value *i* to at least one predetermined threshold;

g) comparing the BLER estimate to at least one predetermined threshold equal to a multiple of the target BLER value to produce at least one BLER estimate report trigger; and

h) sending a BLER estimate report upon the production of the report trigger.

8. The method of claim 7 wherein the BLER reporting occurs during a steady state phase of a call session between two entities of the communication system, wherein said steps are repeated to the extent possible, during the call session in entirety.

9. The method of claim 7 wherein step (f) further comprises a first predetermined threshold based on a minimum number of data blocks to calculate cyclic redundancy error check on the data blocks.

10. The method of claim 9 wherein step (f) further comprises a second predetermined threshold for a minimum number of data blocks, and a third predetermined threshold for a maximum number of data blocks.

11. The method of claim 7 wherein step (g) further comprises a first predetermined threshold of a k multiple of the target BLER, wherein $k>1$.

12. The method of claim 11 wherein step (g) further comprises a second predetermined threshold of an alpha multiple of the target BLER, wherein alpha=1.

13. The method of claim 12 wherein step (g) further comprises a third predetermined threshold of a gamma multiple of the target BLER, wherein gamma<1.

14. The method of claim 7 wherein said BLER estimate report is reflective of data block reception over a time interval that includes the i_prime number of data blocks; the S*(i)* number of erroneous data blocks; the BLER estimate; and an identification of the report trigger.

15. The method of claim 14 wherein the data blocks are transport blocks (TBs) associated with a plurality of transport channels (TrCHs) multiplexed on a coded composite transport channel (CCTrCH), each transport channel having a target BLER based on quality of service requirement and the method is performed with respect to a selected channel identified as a reference transport channel (RTrCH).

wherein the transport blocks are associated with a plurality of transport channels multiplexed on a coded composite transport channel (CCTrCH), each transport channel having a target BLER based on quality of service requirement,

16. The method of claim 15 wherein said BLER estimate is representative of the CCTrCH, said report further comprising:

a target BLER for the CCTrCH;

an identification code for the CCTrCH.

17. The method of claim 16 wherein BLER measurement is performed a reference transport channel and BLER estimate report further comprises:

an identification code for the reference transport channel.

18. A receiver for a communication station for use in a wireless communication system wherein data is transmitted in blocks over a communication channel during successive time intervals of a specified size and block error rate (BLER) information of the reception of the data blocks on the communication channel is reported for use in controlling channel transmissions, the receiver comprising:

an error check unit configured to perform error checking on the data blocks received;

at least one counter configured to count i number of data blocks received over the time interval and $S(i)$ number of data blocks having errors;

a processor configured to compare value i to at least one predetermined threshold; configured to calculate a BLER estimate based on the values i and $S(i)$; configured to compare the BLER estimate to at least one predetermined multiple of a target BLER value for the channel to produce at least one BLER estimate report trigger when the BLER estimate exceeds the predetermined multiple of the target BLER value; and configured to create a BLER estimate report in response to the production of at least one report trigger; and

a memory unit for storing the count values i and $S(i)$, the BLER estimate, and the trigger threshold values.

19. The invention of claim 18 wherein said BLER estimate report is reflective of data block reception over a time interval that includes the *i* number of observed data blocks over the time interval; the S*(i)* number of erroneous data blocks over the time interval; the BLER estimate for the time interval; and an identification of the report trigger.

20. A radio network controller for a 3GPP system including the receiver according to claim 18.

21. The invention of claim 19 wherein the data blocks are transport blocks (TBs) associated with a plurality of transport channels (TrCHs) multiplexed on a coded composite transport channel (CCTrCH), each transport channel having a target BLER based on quality of service requirement and the BLER estimate is associated with a selected channel identified as a reference transport channel (RTrCH).

22. The invention of claim 21 wherein said BLER estimate is representative of the CCTrCH, said report further comprising:

a target BLER for the CCTrCH;

an identification code for the CCTrCH.

23. The invention of claim 22 wherein said report further comprises:

an identification code for the reference transport channel.

24. The invention of claim 18 wherein the processor is further configured to compare value *i* to a first predetermined threshold based on a minimum number of data blocks to calculate cyclic redundancy error check on the data blocks.

25. The invention of claim 24 wherein the processor is further configured to compare value i to a second predetermined threshold for a minimum number of data blocks, and a third predetermined threshold for a maximum number of data blocks.

26. The invention of claim 18 wherein the processor is further configured to compare the BLER estimate to a first predetermined threshold of a k multiple of the target BLER to produce at least one report trigger, wherein $k>1$.

27. The invention of claim 18 wherein the processor is further configured to compare the BLER estimate to a second predetermined threshold of an alpha multiple of the target BLER to produce at least one report trigger, wherein alpha=1.

28. The invention of claim 18 wherein the processor is further configured to compare the BLER estimate to a third predetermined threshold of a gamma multiple of the target BLER to produce at least one report trigger, wherein gamma<1.